

OPTICAL INSPECTION METHOD AND APPARATUS HAVING AN ENHANCED
HEIGHT SENSITIVITY REGION AND ROUGHNESS FILTERING

ABSTRACT

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10 An optical inspection method and apparatus having an
enhanced height sensitivity region and roughness filtering uses
a Fabry-Perot cavity to increase the phase detection sensitivity
for light reflected from surface defects having a height above a
predetermined level. A partially reflective surface is inserted
between an illumination subsystem and a surface under
inspection. The position of the partially reflective surface
with respect to the surface under inspection is adjusted to
provide both filtering of defects below the predetermined level
and enhance sensitivity for a region of defect heights above the
predetermined level. The angular resolution of the inspection
system is improved, providing far-field inspection that can
detect small-profile defects having unacceptable heights. Media
storage, semiconductor wafer and other precision surface
20 manufacture may be improved by use of the techniques of the
present invention.